CLAIM SET AS AMENDED:

1. (Currently Amended) A method of discriminating a sample for a sensor system which quantitates ~~the~~ a concentration of a target substance contained in the sample by measuring electric current, said method comprising the steps of:

using a ratio of a measured current value to a time differential value of the current value as a discriminating parameter;

defining a discrimination function for discriminating kinds of a plurality of ~~objective~~ samples, said discrimination function using said discriminating parameter as an independent variable;

using a numeric value obtained by substituting the value of said discriminating parameter into said discrimination function, as a discriminating index; and

discriminating the kind of any ~~sample~~ one of the plurality of samples based on said discriminating index,

wherein said discrimination function is defined by means of an expression of a high degree for said discriminating parameter.

2. (Original) The method according to claim 1, wherein said discrimination function is defined by means of an expression using a plurality of said discriminating parameters.

3-4 (Canceled)

5. (Original) The method according to claim 1, wherein the kinds of the samples to be discriminated are a body fluid and a control fluid.

6. (Currently Amended) The method according to claim 5, ~~wherein said sensor system is judged whether it is right or not based on a quantitated value of the concentration of the target substance contained in the control fluid, and then a resultant judgement is indicated~~ further comprising the steps of:

judging whether said sensor system is operating properly or not based on a quantitated value of the concentration of the target substance; and

indicating a result of the judging step.

7. (Currently Amended) The method according to claim 1, ~~wherein when the value of said discriminating index is within a predetermined range that it is difficult to discriminate the kind of the sample, the kind of the sample is not discriminated while the purport is indicated~~ further comprising the step of:

indicating that the step of discriminating the kind of the sample has not been automatically performed when the discriminating index is within a predetermined range such that it is difficult to discriminate the kind of the sample.

8. (New) The method according to claim 7, further comprising the step of:

designating that a manual operation is required when the discriminating index is within the predetermined range such that it is difficult to discriminate the kind of the sample.

9. (New) A method of discriminating a sample for a sensor system which quantitates a concentration of a target substance contained in the sample by measuring electric current, said method comprising the steps of:

using a ratio of a measured current value to a time-differential value of the current value as a discriminating parameter;

defining a discrimination function for discriminating kinds of a plurality of samples, said discrimination function using said discriminating parameter as an independent variable;

using a numeric value obtained by substituting the value of said discriminating parameter into said discrimination function, as a discriminating index; and

discriminating the kind of any one of the plurality of samples based on said discriminating index, in which

said discrimination function is defined by means of an expression using P number of said discriminating parameters, P being an integer larger than or equal to three,

wherein said sample is discriminated using a boundary of a (P-1) dimensional surface.